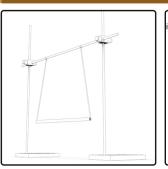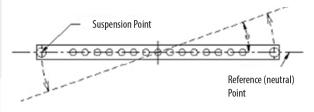# Doubly Suspended Pendulum

The experiment

- Physics and modeling of a complex pendulum.
- Investigate Newton's second law for angular motion.
- Determine the moment of inertia for a bifilar pendulum.
- Calculating uncertainty and graphical representation of data.

How does it work?

A bifilar pendulum is a straight rod, hanging horizontally from two parallel wires which allow the rod to rotate freely about the vertical axis. In the stationary condition, the filars stay vertically and there are no forces in other directions. As soon as the pendulum is twisted, the rods move along with it and the horizontal components of the tension in the filars creates a torque, forcing the rod to accelerate back towards the starting position.

Parts Included?

- Clamps
- Lab stands
- Pendulum rod
- Filar wires
- Stopwatch

This torque is proportional to the angle of twist and, just like a simple pendulum, causes the rod to start oscillating about the vertical axis. We investigate Newton's second law of motion for angular motion, torques, mathematical modeling and learn how to plot and analyze data.

Suspension Point

Reference (neutral) Point

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